We will begin shortly after 5:00 to allow time for people to load the necessary software for the webinar. While you are waiting for the webinar to begin, solve the following problems. Use multiple representations to solve each problem if possible.

$$a)3 + 5 = 8$$

$$b)38 + 7 = 45$$

c)
$$492 + 263 = 755$$

$$d)14.8 + 13.6 = 28.4$$

You need two documents for today's webinar. You should have received them via email. If you did not, you can go to:

www.tinyurl.com/mtifollowup

Scroll down until you see the light purple row of the spreadsheet

- Click on addition progression models and print
- Click on addition progression standards and print

OR email

jacquelynismail@boisestate.edu



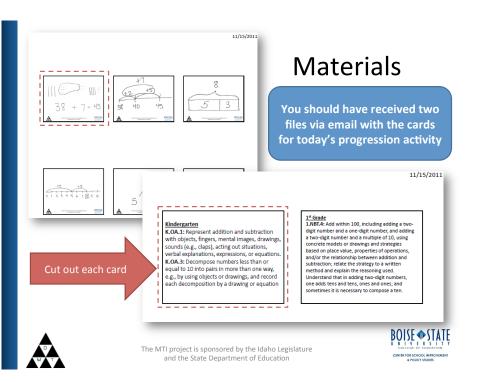
Kindergarten – 6th Grade Addition Progression



myself zero pay raise this year."







Technical Items

If you have speakers connected to your computer you should be able to hear audio through that mechanism.

If you cannot hear right now the number is:

• Toll-free: 1 877 739 5903

• Access Code: 647-341-922

· Audio PIN: Shown after joining the Webinar





Overview

- Addition in the current Idaho State Standards and the Common Core Standards
- Create K-6 Addition Progression
- Investigate shifts in student thinking
- Compare/discuss progressions
- Links to MTI course



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Standards Names/Definitions

- The standards that have been in place for the past several years and are currently being assessed on ISAT will be referred to as the current Idaho State Standards.
- The new standards (adopted in spring 2011 for implementation in fall 2013) will be referred to as the Common Core State Standards



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Timeline for implementation of the Common Core State Standards & Smarter Balance Assessment



http://www.k12.wa.us/smarter/





 Current Kindergarteners will never be tested on the existing Idaho state standards









Timeline for implementation of the Common Core State Standards & Smarter Balance Assessment



- Current Kindergarteners will never be tested on the existing Idaho state standards
- 7th graders will **potentially** be required to pass a test of the new standards for graduation



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Timeline for implementation of the Common Core State Standards & Smarter Balance Assessment



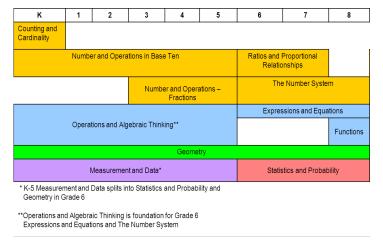
- Current Kindergarteners will never be tested on the existing Idaho state standards
- Current 7th graders will be required to pass a test of the new standards
- · Can we wait to begin implementation?



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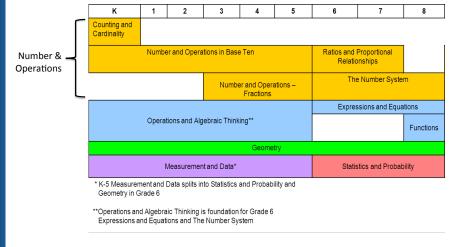
Domain Progressions in the CCCSS







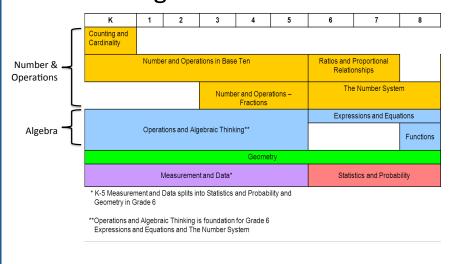
Domain Progressions in the CCCSS



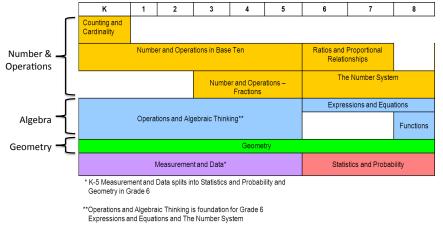




Domain Progressions in the CCCSS









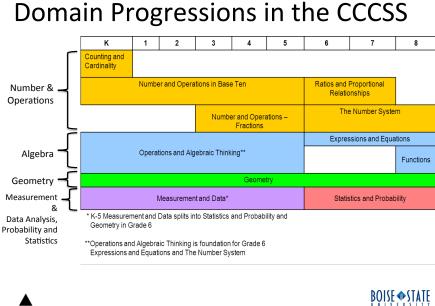
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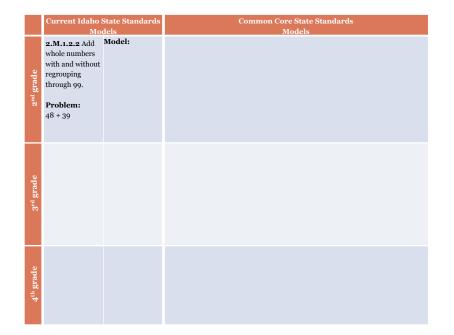




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	Current Io		Common Core SS Models
2 nd grade		148 + 39 8 7	
3 rd grade			
4th grade			

	Current Idaho SS Models	Common Core SS Models
2 nd grade	2.M.1.2.2 Add whole numbers with and without regrouping through 99. Problem: 48 + 39 Model: 48 + 39	
3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	
4 th grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587 Model: 5 8 7 + 4859	

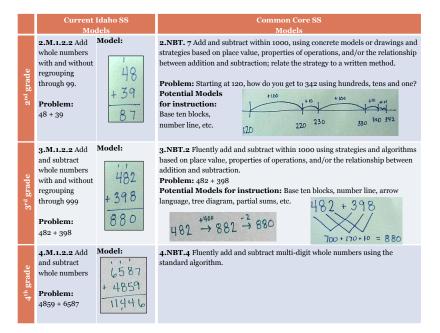
	Current Idaho SS Models 2.M.1.2.2 Add Model: whole numbers	Common Core SS Models
2 nd grade	with and without regrouping through 99. Problem: 48 + 39	
3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	
4 th grade		

	Current Idaho SS Models		Common Core SS Models
2 nd grade	2.M.1.2.2 Add whole numbers with and without regrouping through 99. Problem: 48 + 39	48 + 39 8 7	2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.
3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	482 398 880	
4 th grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587	del: 6587 4859	

	Current Idaho SS Models	Common Core SS Models
2nd grade	2.M.1.2.2 Add whole numbers with and without	2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Problem: Starting at 120, how do you get to 342 using hundreds, tens and one?
grd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	2 3 0
Ath grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587	59

	Current Idaho SS	Common Core SS
2 nd grade	Models 2.M.1.2.2 Add whole numbers with and without regrouping through 99. Problem: 48 + 39	2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Problem: Starting at 120, how do you get to 342 using hundreds, tens and one? Potential Models for instruction: Base ten blocks, number line, etc.
3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Problem: 482 + 398 Potential Models for instruction: Base ten blocks, number line, arrow language, tree diagram, partial sums, etc. 482 + 398 700 • 170 • 10 = 880
4 th grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587 11446	

		Current Idaho SS	Common Core SS
Į		Models	Models
	2 nd grade	2.M.1.2.2 Add whole numbers with and without regrouping through 99. Problem: 48 + 39 Model: 1 1 2 9 4 9 4 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9 9 1 9	2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Problem: Starting at 120, how do you get to 342 using hundreds, tens and one? Potential Models for instruction: Base ten blocks, number line, etc. 120 230 340 342
	3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
	4 th grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587 11446	



	Current Idaho SS	Common Core SS
2nd grade	2.M.1.2.2 Add whole numbers with and without regrouping through 99. Problem: 48 + 39 Model: 48 48 48	2.NBT. 7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Problem: Starting at 120, how do you get to 342 using hundreds, tens and one? Potential Models for instruction: Base ten blocks, number line, etc.
3 rd grade	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999 Problem: 482 + 398	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Problem: 482 + 398 Potential Models for instruction: Base ten blocks, number line, arrow language, tree diagram, partial sums, etc. 482 + 398
4 th grade	4.M.1.2.2 Add and subtract whole numbers Problem: 4859 + 6587 Model: 6587	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm. Problem: 482 + 398 Potential Models for instruction: Number line, arrow language, tree diagram, partial sums, traditional algorithm, etc.

Strategies vs. Models

Informal definitions:

- Strategy the mental process we use to solve a problem
- Model the method of notation used to explain our strategy

Addition Models and Strategies

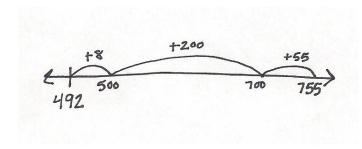
Solve:

492 + 263



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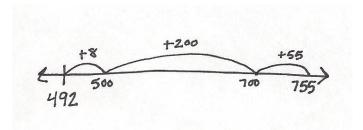
•What strategy is being used?



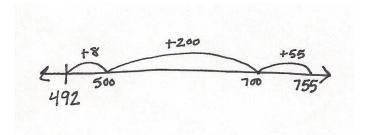








- •What strategy is being used?
- •What model is being used?



- •What strategy is being used?
- •What model is being used?
- •Is it enactive, iconic or symbolic?



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Modes of Representation

Bruner, J. (1964)

Enactive

Physical or action-based representations

Iconic

Visual images of a situation (represents enactive)

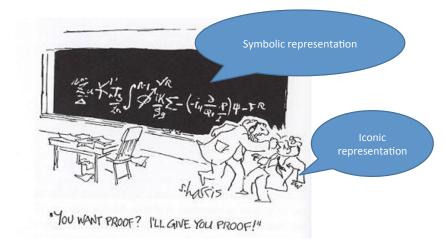
Symbolic

Abstract representations where the meaning of the symbols must be learned

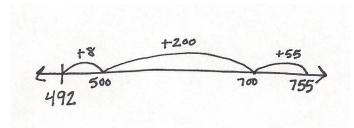










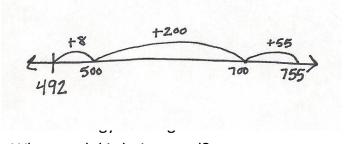


- •What strategy is being used?
- •What model is being used?
- •Is it enactive, iconic or symbolic?



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- •What model is being used?
- •Is it enactive, iconic or symbolic?
- •At what grade level is this number set (492 + 263) and model (number line) currently taught?



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Building the Progression

- Materials
 - You should have two sets of cards for the following portion of the webinar
 - There should a set of materials for each 2-3 people you have in your group
 - The set of cards that had six boxes to a page (larger size boxes) will be used to create the chart on the following page



The set of cards that had six boxes to a page will be used to create this chart



2nd



ENACTIVE

ICONIC

SYMBOLIC

The range of models called for in the standards are based on the number sets and operations called for at that grade-level. However, the models from previous grade-levels will likely be present in student solution strategies in the next grade-level.



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Directions:

- 1. The cards detail multiple models for solving the following problems:
 - a) 3 + 5 = 8
 - b) 38 + 7 = 45
 - c) 492 + 263 = 755
 - d) 14.8 + 13.6 = 28.4
- Based upon the Common Core State Standards provided, place the cards in the correct gradelevel for the **number set** and **model**.
- Within a grade-level initially sort the cards according to enactive, iconic and symbolic representations
- 4. Then depending upon time, examine the models within and between grade-levels for the mental strategies being used to determine the connections between the models and potential progressions of student thinking.

ENACTIVE

ICONIC

SYMBOLIC

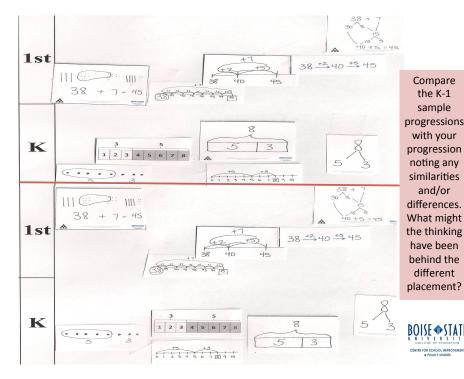
Questions:

* Type them in the question box

or call us at (208)426-4650

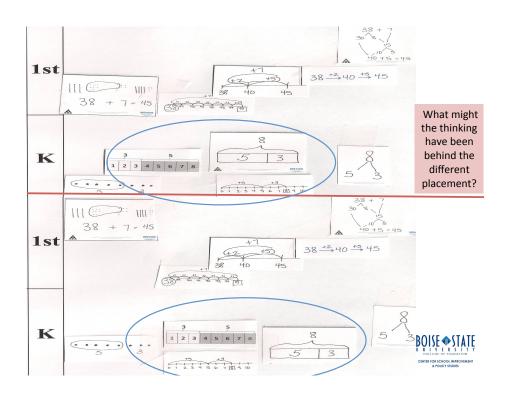
Example progressions

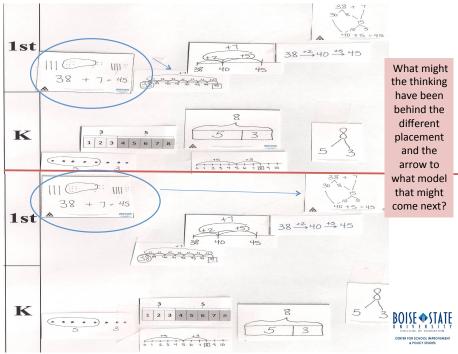
- K-1
- 2-4
- 5-6

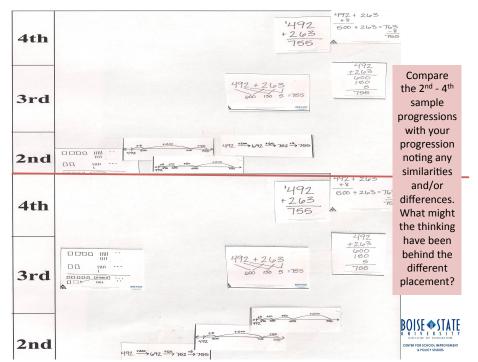


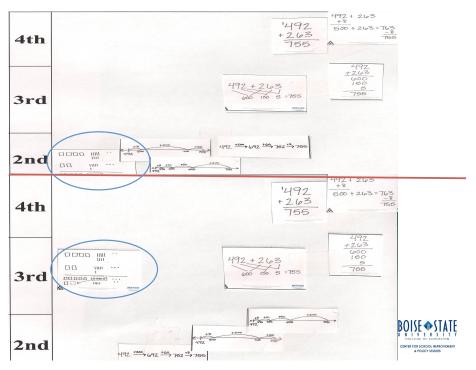


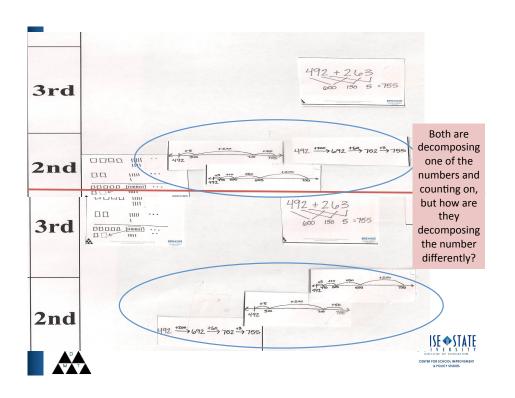


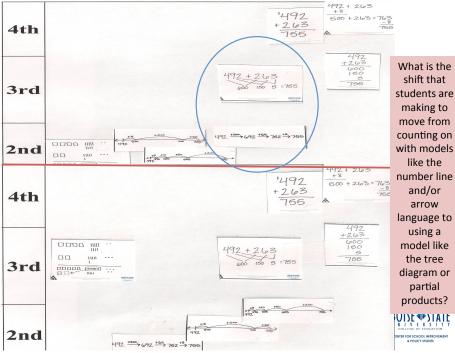


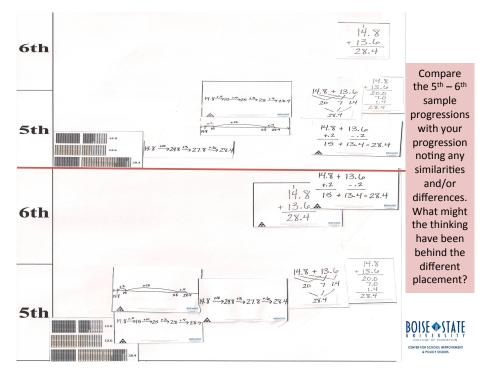


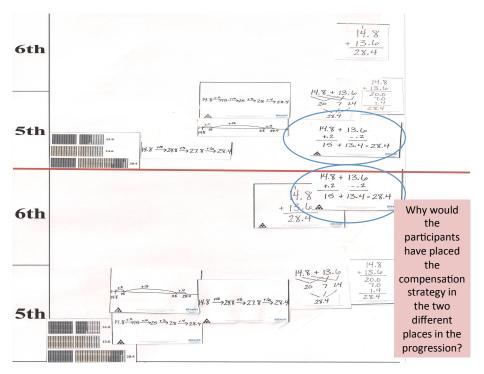


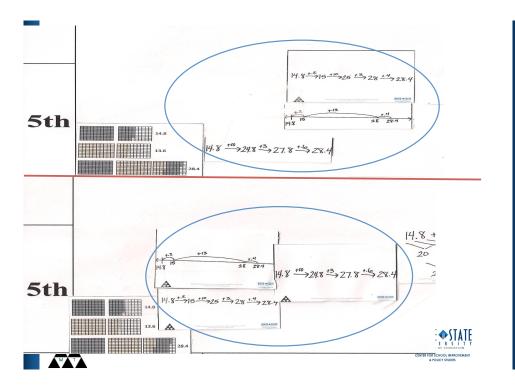












What are the big ideas you're leaving with?



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What are the big ideas you're leaving with?

- It is important to know models appropriate for your grade level standards
- Knowing what is happening before and after your grade level can help guide instruction
- There is not a perfect addition progression. We can have general ideas, but models and strategies may fit in different places based on the students, the task or the number set.





Which statement are you leaving with?

• "I need to teach the models that are appropriate for my grade level."

VS.

 "I need to find contextual problems that will encourage students to use the models that are appropriate for my grade level."





Which statement are you leaving with?

 "I need to teach the models that are appropriate for my grade level."

VS.

 "I need to find contextual problems that will encourage students to use the models that are appropriate for my grade level."



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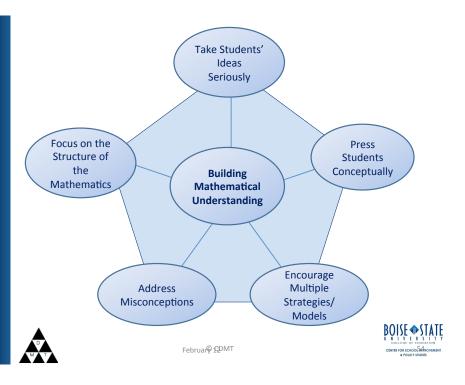
CENTER FOR SCHOOL IMPROVEMENT & POLICY STUDIES



- <u>Duration</u>: Accumulate 15 hours of webinar training, live or archived.
 Additional webinars will be developed and offered during the Fall of 2012.
 The credit will be earned the semester the 15 hours is completed.
- <u>Registration:</u> Upon completion of the 15 hours, a participant will register with BSU for the one professional education credit.
- <u>Documentation</u>: Completion of a brief webinar summary and reflection for each webinar is required.
- Cost: \$65
- Note: The one professional education credit earned for completion and payment of \$65, does not count towards the three credits earned with completion of the MTI course. The webinars are follow-up support after completion of the MTI course.
- Information: http://www.sde.idaho.gov/site/math/mti.htm
- Questions: Nichole Hall nhall@sde.idaho.gov







Thank you for attending the webinar!

Questions







- Contact Information
 - Michele Carney michelecarney@boisestate.edu
 - Jackie Ismail jacquelynismail@boisestate.edu
- DMT Website- http://dmt.boisestate.edu
- Follow Up Opportunities: http://www.tinyurl.com/mtifollowup



